

## Claims

1. A control system for a load, the system comprising a first microprocessor having an output to drive one side of a load, a second microprocessor having an output to drive the other side of the load, the system being arranged so that when either microprocessor detects a fault in the control of the load the load is switched off.

2. A system according to claim 1 wherein both microprocessors monitor the current in the load.

3. A system according to claim 1 or 2 wherein a first resistor of relatively high value is connected between a driver output of the first microprocessor and an input of the second microprocessor, to allow the second microprocessor to monitor if the first microprocessor is attempting to turn on the load.

4. A system according to claim 3 wherein a second resistor with a value less than that of the first resistor, is connected between the output of the first microprocessor and a low voltage to ensure a driver controlling the load is off whenever the output of the first microprocessor is in a high resistance state.

5. A system according to any preceding claim wherein at least one of the microprocessors is arranged to calculate the current of the load by measuring the voltage across it and, when the load current does not meet pre-determined criteria, to switch out the load.

6. A system according to any preceding claim wherein the control system is a vehicular control system.

7. A system according to any preceding claim wherein the load is a gear box selector, a clutch selector or a valve.

5 8. A control method for a load, the method comprising a first microprocessor having an output to drive one side of a load, a second microprocessor having an output to drive the other side of the load, the system being arranged so that when either microprocessor detects a fault in the control of the load the load is switched off.

10 9. A method according to claim 8 further comprising both microprocessors monitoring the current in the load.

15 10. A method according to claim 8 or 9 wherein the second microprocessor is arranged to monitor if the first microprocessor is attempting to turn the load on by means of a first resistor of relatively high value between the driver output of the first microprocessor and an input of the second microprocessor.

20 11. A method according to claim 10 wherein the first microprocessor is monitored by means of a second resistor with a value less than that of the first resistor, the second resistor being connected between the output of the first microprocessor and a low voltage to ensure the driver controlling the load is off whenever the output of the first microprocessor is in a high resistance state.

25 12. A method according to any of claims 8 to 11 further comprising at least one of the microprocessors calculating the current of the load by measuring the voltage across it and, when the load current does not meet pre-determined criteria, switching out the load.

13. A method according to any of claims 8 to 12 wherein the control method is applied to a vehicular control system.

14. A method according to any of claims 8 to 13 wherein the load is a gear  
5 box selector, a clutch selector or a valve.

15. A control system for a load, the system comprising a first microprocessor having an output to provide a drive signal to drive the load, a second microprocessor to monitor the operation of the first microprocessor and the operation of the load, the system being arranged so that when the second microprocessor detects a fault in the operation of the first microprocessor and/or the operation of the load, the second microprocessor is arranged to switch out the load or halt the operation of the first microprocessor.  
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15 16. A control method for a load, the method comprising driving a load by means of a drive signal provided by a first microprocessor, monitoring the operation of the first microprocessor and the operation of the load by means of a second microprocessor, when the second microprocessor detects a fault in the operation of the first microprocessor and/or the operation of the load, the second microprocessor switches out the load and/or halts the operation of the first microprocessor.  
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